

Regional HOT Lanes Network Feasibility Study

Phase 2, Task 11

PRELIMINARY FINANCIAL ASSESSMENT OF THE HOT SYSTEM

Prepared for:

Metropolitan Transportation Commission

and

California Department of Transportation

Prepared by:

PB

with

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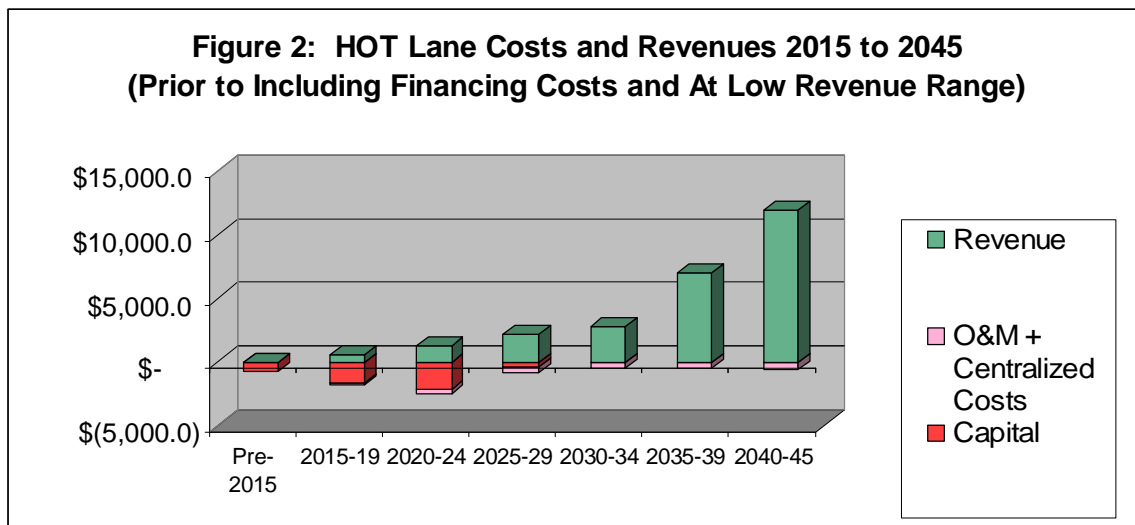
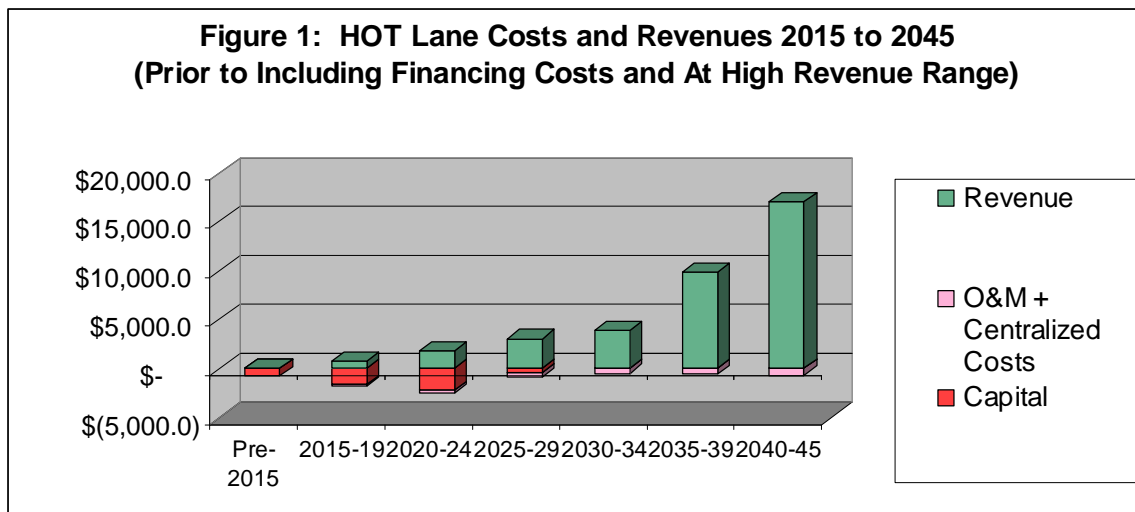
September 2007

(v4)

Introduction

PB developed a financial review for the MTC Regional HOT Lane Network Feasibility and Implementation Study based on the sequencing plan described in the Task 12 report.. The financial review is based on the HOT study Phase 2 updated costing reflected in Tables 1A and 1B in the appendix attached to this memorandum. The annual net revenues reported in the memorandum on subtask 8.3 are used in this financial review.

The estimates of costs and revenues (prior to consideration of financing costs) are illustrated in Figures 1 and 2 below.



Two scenarios were considered for this financial review. A simplified cash flow review was prepared for Scenario #1. Once MTC and the stakeholders reviewed Scenario #1, direction was given to develop Scenario #2, the sequencing plan described in the Task 12 report, as the basis for the Phase 2 findings (including findings concerning financing).

Key updates to costing included a 20% increase in the HOT lane upgrade capital costs and removal of HOV lane costs now to be funded through the Proposition 1B Congestion Mitigation Improvement Account. The costs for HOV lanes (other than those funded by the CMIA program), operations and maintenance, and centralized services are the same as considered in Phase 1. No adjustments of costs were made for anticipated STIP funding.

Financing Assumptions

With the intent of advancing development of HOV lanes and HOT lane upgrades, MTC and its partners will find it necessary to either use public funding sources or to borrow funds to pay for project cost not now fully funded through committed sources as documented in the Transportation Improvement Program (TIP), including funding recently secured through the Corridor Mobility Improvement Account. . Some HOV widening projects are included in the region's long-range transportation plan; however, this funding is not secured. And, in discussions with MTC, it was agreed that this financial review would not assume use of any public funds other than those presently committed through MTC's 2007 TIP. To the extent HOT network revenues can finance completion of the HOT network, this would free up for other purposes funds that otherwise might have been spent on HOV widening.

This means that HOT lane toll revenues would need to fund about 275 lane miles of HOV lanes and the upgrading to HOT lanes of about 790 lane miles. The combined capital cost of these investments would be about \$4.8 billion. Under Scenario #2, these investments would need to be made by 2025.

Conditions Affecting Bonding for HOT Lanes

While the HOT lane program financing issues have not been reviewed with financial institutions, several conditions are readily apparent and will guide future financial reviews. These include the following:

- MTC will need to develop an investment grade revenue forecast – The travel and revenue forecasts used in Phases 1 and 2 provide a reasonable basis for assessing the feasibility of a HOT lane network. However, with the need to validate the HOV volumes, detail the HOT lane configurations (ingress and egress locations, weave locations, etc.), and run the travel and revenue models to equilibrium and in an interactive manner, the revenue estimates must be considered to be preliminary. Bond financing organizations will require an investment grade revenue forecast before they will be in a position to identify appropriate coverage ratios, bond costs, and interest rates.
- Uncertainties will affect bonding – A financing institution will need to understand and assess the likelihood of a variety of risks associated with a HOT lane network. Among the factors that are critical to the revenue forecasts provided through Phase 2 are:
 - Tolling principles – Whether dynamic tolling, flat rate rolling, 24/7 or part time tolling, or other approaches will be used has a significant impact on likely revenues. This review has assumed 24/7 and dynamic tolling. If another approach is used or if there is a likelihood of the method changing during the bonding period, the financial institutions will reflect that probability in the amount that may be borrowed, the interest rate, or other features.
 - HOV occupancy requirements – The revenue forecasts have assumed that Caltrans, MTC, and the partner organizations will cause HOV occupancy requirements for the various lanes to increase when those lanes fill with HOVs. The review assumes that the HOV lanes must function for HOV purposes and that tolled vehicles will be allowed to use the lanes to the extent there is

available space. If the region does not (or is not committed to) increase the occupancy requirement when the lanes fill with HOVs, there will be less lane space to offer to tolled vehicles. That would keep revenues far lower than estimated in Phase 2.

- Use of HOT lane net revenues across a variety of corridors – Some corridors can produce sufficient revenues not only to fund their own costs but also costs for other less financially self-sufficient corridors. Over time, two facets of revenue usage will be critical: 1) higher revenue producing corridors helping to pay development costs for other corridors; and, 2) higher revenue producing corridors' revenues being available to repay bonds used for a variety of corridors. If revenues from one corridor are limited to use only in that corridor, those HOT lanes that are unlikely to cover their own costs for a long time (e.g., 30 years or more into the future) may not be financeable through bonding.
- A form of repayment guarantee will be needed – Financial institutions will look to either a guaranteed revenue source as assurance that the bonds can be paid or will need to discount the anticipated HOT lane revenues sufficiently to assure repayment. The only source considered to date that could provide a significant repayment guarantee is the Bay Area toll bridge revenue pool. That pool or cash flow stream is presently the basis for seismic retrofit bonding and, therefore, is not considered to be a likely basis for HOT lane bond repayment. That leaves the HOT lane revenues themselves as the repayment guarantee source. As noted above, some discounting of the forecast HOT lane revenue stream will be applied.
- Financial institutions will require a coverage ratio – At this very early stage of regional HOT lane planning, there are significant uncertainties about revenues. To be conservative, we have assumed that over a 30 year period, MTC and its partners would need to have at least three times the revenues needed to repay the bonds. With a net revenue estimate (defined in this case as gross revenue less operations and maintenance and centralized services costs) over 30 years of \$25.6 to \$36.5 billion, the 3:1 coverage ratio suggests consideration of repaying a total amount of \$8.5 to \$12.1 billion. The analysis

assumes borrowing of about \$4.725 billion which is workable within the 30 year period although the low range revenue estimate would have a coverage ratio below the target of three (3.0). The concept of a coverage ratio would probably take the form of an annual ratio of available revenues (after deducting operating costs) to debt service. BATA presently operates with a bonding ratio for available revenue to debt service of 1.5.

Cash flow review

Table 3 in the appendix presents the cash flow for the HOT lane network from 2015 through 2045 based on Scenario #2 and the associated cost estimation and revenue forecasts. The amount of borrowing (\$4.725 billion) was based on two factors: 1) the amount of borrowing needed to have the entire HOT lane network constructed by 2025; and, 2) seeking to have the borrowing to be within the 3:1 coverage ratio. While these two factors could counteract each other, this particular cash flow table is reasonably workable over 30 years at a borrowing level of \$4.725 billion.

The 20 year coverage ratios are lower than would be desirable if that were the only period being considered. With a very strong increase in revenues in the 2030 to 2045 period, the coverage ratio improves significantly over the period.

Bond issuance costs have not been estimated in this review.

The borrowing analysis used the following factors:

- Annual coupon rate of 5.0%
- Annual yield of 5%
- Bond price of \$100
- Interest rate earned on cash balances of 4.5%

With these factors, the financing review provides the following results:

- Debt service over 30 years totals \$9.39 billion.
- Debt service over 20 years totals \$6.67 billion (with ten more years of payments due)
- Interest paid over 30 years totals \$3.85 billion.

Important decisions that will affect cash flow, borrowings, bond interest payments, and other elements include the following:

1. What source or means of repayment guarantee will be used?
2. What range of HOV and HOT lane investments are to be included in the projects to be paid for through the bonds?
3. Will MTC and its partners build cash balance over time or will some portion of that be used for financing projects in addition to HOT lanes?

APPENDIX

Table 1A: HOT Lane Network Costs and Revenues at High Revenue Range (Millions of 2006 \$s and without financing costs)

	<u>Pre-2015</u>	<u>2015-19</u>	<u>2020-24</u>	<u>2025-29</u>	<u>2030-34</u>	<u>2035-39</u>	<u>2040-45</u>	<u>Total</u>
Capital	\$ (836.2)	\$ (1,538.6)	\$ (2,434.5)	\$ -	\$ -	\$ -	\$ -	\$ (4,809.3)
O&M + Centralized Costs	\$ -	\$ (201.6)	\$ (323.9)	\$ (495.0)	\$ (497.0)	\$ (530.2)	\$ (646.1)	\$ (2,694.0)
Revenue	\$ -	\$ 752.3	\$ 1843.5	\$ 3,107.3	\$ 3,913.4	\$ 9,916.2	\$ 17,010.5	\$ 36,543.2
Net Revenue (before financing)	\$ (836.2)	\$ (987.9)	\$ (915.0)	\$ 2,612.3	\$ 3,416.4	\$ 9,385.9	\$ 16,364.3	\$ 29,040.0

Table 1B: HOT Lane Network Costs and Revenues at Low Revenue Range (Millions of 2006 \$s and without financing costs)

	<u>Pre-2015</u>	<u>2015-19</u>	<u>2020-24</u>	<u>2025-29</u>	<u>2030-34</u>	<u>2035-39</u>	<u>2040-45</u>	<u>Total</u>
Capital	\$ (836.2)	\$ (1,538.6)	\$ (2,434.5)	\$ -	\$ -	\$ -	\$ -	\$ (4,809.3)
O&M + Centralized Costs	\$ -	\$ (201.6)	\$ (324.0)	\$ (495.0)	\$ (497.0)	\$ (530.2)	\$ (646.1)	\$ (2,694.0)
Revenue	\$ -	\$ 526.6	\$ 1,290.5	\$ 2,175.1	\$ 2,739.4	\$ 6,941.3	\$ 11,907.3	\$ 25,580.3
Net Revenue (before financing)	\$ (836.2)	\$ (1,213.6)	\$ (1,468.0)	\$ 1,680.1	\$ 2,242.3	\$ 6,411.1	\$ 11,261.2	\$ 18,077.0

Table 2: HOT Lane Revenue, O&M Costs, Debt Service, and Coverage Ratio for Scenario #2

	HOT Lane Revenues and Costs (billions of 2006 \$s)			
	2015-35 (20 year period)		2015-2045 (30 year period)	
	Low revenue level (at 30% below forecast)	High (at forecast level)	Low (at 30% below forecast)	High (at forecast level)
Gross revenues	\$ 8.0	\$ 11.4	\$ 25.6	\$ 36.5
Less O&M + centralized services costs	\$ (1.6)	\$ (1.6)	\$ (2.7)	\$ (2.7)
Balance available for capital and/or debt service ¹	\$ 7.4	\$ 9.8	\$ 22.9	\$ 33.8
Estimated debt service (with borrowing of \$4.725 billion)	\$ (6.7)	\$ (6.7)	\$ (9.4)	\$ (9.4)
Resulting estimated coverage ratio	1.1	1.5	2.4 ²	3.6

¹ Note that debt service payments would continue through the 30 year period. The \$6.7 billion in estimated debt service for the 20 year period represents the payments over the 20 years and such payments would need to continue for the following 10 years.

² This estimated coverage ratio (2.4) is somewhat below the targeted coverage ratio of 3.0. At this stage of program development, this is not seen as a limitation. As revenue and cost estimates are refined, this ratio should be evaluated further.

Table 3
CAPITAL FINANCING - Scenario 2
9/29/2007
Estimates in Millions of \$2006
Prepared by BKP/AD

	Pre-2015	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cash Flow	(\$836.21)	\$21.50	\$26.91	(\$198.04)	(\$345.60)	(\$492.66)	\$188.60	\$183.63	(\$184.73)	(\$429.62)	(\$672.79)	\$478.94
Capital Loan	\$4,725.00											
Total Revenues	\$3,888.79	\$21.50	\$26.91	(\$198.04)	(\$345.60)	(\$492.66)	\$188.60	\$183.63	(\$184.73)	(\$429.62)	(\$672.79)	\$478.94
Debt Service	\$0.00	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02
Total Costs	\$0.00	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02
Annual Surplus/Deficit	\$3,888.79	(\$281.52)	(\$276.11)	(\$501.06)	(\$648.62)	(\$795.68)	(\$114.42)	(\$119.39)	(\$487.75)	(\$732.64)	(\$975.81)	\$175.91
Beginning Cash Balance	\$0.00	\$3,888.79	\$3,775.93	\$3,663.53	\$3,316.05	\$2,802.05	\$2,114.56	\$2,092.72	\$2,064.81	\$1,659.00	\$984.54	\$31.07
Interest Earned on Positive Avg. Cash Balance*		\$168.66	\$163.70	\$153.58	\$134.63	\$108.19	\$92.58	\$91.49	\$81.94	\$58.17	\$22.35	\$5.36
Revised Cash Balance Total	\$3,888.79	\$3,775.93	\$3,663.53	\$3,316.05	\$2,802.05	\$2,114.56	\$2,092.72	\$2,064.81	\$1,659.00	\$984.54	\$31.07	\$212.34

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CAPITAL FINANCING - Scenario 2
9/29/2007
Estimates in Millions of \$2006
Prepared by BKP/AD

	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Cash Flow	\$497.58	\$519.27	\$544.14	\$572.36	\$603.74	\$639.30	\$678.91	\$722.88	\$771.53	\$1,705.54
Capital Loan										
Total Revenues	\$497.58	\$519.27	\$544.14	\$572.36	\$603.74	\$639.30	\$678.91	\$722.88	\$771.53	\$1,705.54
Debt Service	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02
Total Costs	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02
Annual Surplus/Deficit	\$194.56	\$216.24	\$241.11	\$269.33	\$300.71	\$336.28	\$375.89	\$419.85	\$468.50	\$1,402.52
Beginning Cash Balance	\$212.34	\$420.83	\$660.88	\$937.16	\$1,254.72	\$1,618.66	\$2,035.35	\$2,511.28	\$3,053.59	\$3,670.05
Interest Earned on Positive Avg. Cash Balance*	\$13.93	\$23.80	\$35.16	\$48.23	\$63.23	\$80.41	\$100.05	\$122.45	\$147.95	\$196.71
Revised Cash Balance Total	\$420.83	\$660.88	\$937.16	\$1,254.72	\$1,618.66	\$2,035.35	\$2,511.28	\$3,053.59	\$3,670.05	\$5,269.27

Table 3
CAPITAL FINANCING - Scenario 2
9/29/2007
Estimates in Millions of \$2006
Prepared by BKP/AD

	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	30-Year Totals
Cash Flow	\$1,784.65	\$1,870.20	\$1,962.74	\$2,062.84	\$2,359.16	\$2,490.88	\$2,633.51	\$2,788.04	\$2,955.54	\$3,137.21	\$29,039.97
Capital Loan											\$4,725.00
Total Revenues	\$1,784.65	\$1,870.20	\$1,962.74	\$2,062.84	\$2,359.16	\$2,490.88	\$2,633.51	\$2,788.04	\$2,955.54	\$3,137.21	\$33,764.97
Debt Service	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$9,393.75
Total Costs	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$303.02	\$9,393.75
Annual Surplus/Deficit	\$1,481.62	\$1,567.18	\$1,659.71	\$1,759.82	\$2,056.13	\$2,187.85	\$2,330.49	\$2,485.02	\$2,652.52	\$2,834.18	\$24,371.22
Beginning Cash Balance	\$5,269.27	\$7,021.35	\$8,939.75	\$11,039.09	\$13,335.27	\$16,037.75	\$18,996.53	\$22,234.30	\$25,775.78	\$29,647.89	\$0.00
Interest Earned on Positive Avg. Cash Balance*	\$270.45	\$351.22	\$439.63	\$536.36	\$646.35	\$770.93	\$907.28	\$1,056.46	\$1,219.59	\$1,397.92	\$9,508.78
Revised Cash Balance Total	\$7,021.35	\$8,939.75	\$11,039.09	\$13,335.27	\$16,037.75	\$18,996.53	\$22,234.30	\$25,775.78	\$29,647.89	\$33,879.99	\$33,879.99